

**IN THE CLAIMS**

Please substitute the following amended claims for corresponding claims previously presented. A copy of the amended claims showing current revisions is attached.

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5. A normalisation apparatus according to claim 1, wherein the predetermined distribution is provided by a dedicated electrical circuit.

6. A normalisation apparatus according to claim 1, wherein the first signal is delayed in order that the normalisation may be synchronised with the second signal.

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12. A normalisation apparatus according to claim 10, wherein an output from the comparator means is directed to a plurality of counters, each counter being arranged to increment in response to the emitted or scattered signal detected at a predetermined delay following an excitation pulse.

13. A normalisation apparatus according to claim 1, wherein the discrimination level of the comparator means is an upper level, such that that proportion of the distributed signal which lies above the discrimination level is discarded by the comparator means.

a<sup>3</sup>  
concluded

14. A normalisation apparatus according to claim 1, wherein the discrimination level of the comparator means is a lower level, such that that proportion of the distributed signal which lies below the value of the discrimination level is discarded.

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16. A normalisation apparatus according to claim 1, wherein the adjustment of the discrimination level is achieved by adding or subtracting values from the distributed signal such that the predetermined energy distribution is shifted in relation to the discrimination level.

a<sup>4</sup>

17. A normalisation apparatus according to claim 1, wherein a variable delay is introduced into the adjustment of the discrimination level of the comparator means, to provide a phase difference measurement.

18. A normalisation apparatus according to claim 1, wherein the apparatus is provided with a series of comparator means, the comparator means being provided with different delays, thereby providing a phase difference measurement.

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20. A normalisation apparatus according to claim 18, wherein the time resolution of at least one comparator means is adjustable, thereby providing an adjustable channel width for the phase difference measurement.

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22. A normalisation apparatus according to claim 19, wherein at least one of the adjustments is automated to locate specific features of the phase difference measurement.

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23. A normalisation according to claim 17, wherein a variable delay is applied to the first signal, thereby providing a further phase difference measurement.

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Please delete claims 27 and 28 ✓